



## **Process for curing elastomeric vinylidene fluoride copolymers**

**Description of Technology:** This invention relates to fluoroelastomer curing processes. In particular, this invention relates to an improved process for curing elastomeric vinylidene fluoride copolymers.

### **Patent Listing:**

1. **US Patent No. 6,221,971**, Issued April 24, 2001, "Process for curing elastomeric vinylidene fluoride copolymers"

<http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6221971>

**Market Potential:** Elastomeric copolymers of vinylidene fluoride with other fluorinated comonomers, for example hexafluoropropylene, are well known, commercially available compositions which are resistant to chemical and thermal attack. As a result, they find particular utility as the polymeric components of o-ring seals for fuel and lubricant systems and shaft seals in automotive powertrain systems. The stability of these polymers is primarily due to their chemical structure, specifically to the high percentage of carbon-fluorine bonds which they contain. Carbon-fluorine bonds are relatively unreactive compared to bonds between carbon and other elements. Consequently, highly fluorinated vinylidene fluoride copolymers are less susceptible to chemical degradation than are non-fluorinated polymers of comparable structure.

Because of the broad utility of elastomeric vinylidene fluoride copolymers, it would be desirable to have available a cure system which would provide a more efficient and effective cure than the polyhydroxy and peroxide processes of the prior art. It would be particularly desirable to have an improved system adaptable to such copolymers which do not contain hexafluoropropylene as well as those which contain this comonomer.

### **Benefits:**

- A cure system that provides a more efficient and effective cure than previous art
- System adaptable to different copolymers

### **Applications:**

- Automotive powertrain systems
- O-rings

### **Contact: Ken Anderson**

*Director, Entrepreneurial & Small Business Support, Delaware Economic Development Office (DEDO)*  
*Carvel State Building, 820 French Street, Wilmington, DE, 19801*  
*Phone: (302) 577-8496, Fax: (302) 577-8499, Email: [Kenneth.R.Anderson@state.de.us](mailto:Kenneth.R.Anderson@state.de.us)*